

Abstract of the Disclosure

A falling film evaporator includes a flow distributor for uniformly distributing a two-phase refrigerant mixture across a tube bundle. The flow distributor includes a stack of at least three perforated plates each of which are separated by nearly full-width, full-length gaps or chambers. The flow distributor may also include a suction baffle and/or a distributor baffle. The distributor baffle extends downward to provide a hairpin turn past which refrigerant travels before exiting the evaporator. This directional change helps separate liquid from a primarily gaseous refrigerant stream. The suction baffle has various size openings to ensure that the flow rate of refrigerant through the hairpin turn is generally uniform and is maintained low enough to ensure liquid disentrainment over and along the length of the tube bundle within the evaporator.